

LoRaWAN Optical Oxygen Gas Sensor



Smart Agriculture, Smart Building, Smart City, Smart Facility, Smart Factory, Smart Farm, Smart Healthcare, Smart Retail, Smart Transportation

SKU: WSLRW-LMO2



LORAWAN OPTICAL OXYGEN GAS SENSOR WSLRW-LMO2



LoRaWAN
compatible



The WSLRW-LMO2 is a factory-calibrated LoRaWAN ambient oxygen sensor operating on the principle of luminescence quenching by oxygen. This optical measurement technique eliminates the electrochemical reaction found in conventional sensors, delivering a significantly extended operational lifetime compared to electrochemical or galvanic alternatives, while maintaining comparable low power consumption.

Integrated temperature compensation ensures linear and accurate output across a wide environmental operating range without requiring additional system components. The sensor is free of lead and hazardous substances, and exhibits negligible cross-sensitivity to other gases, minimizing false readings in mixed-gas environments.

An ultra-low power architecture combined with intelligent onboard firmware enables up to 10 years of operation on two standard AA-type batteries, depending on transmission interval configuration. Data is transmitted over LoRaWAN, supporting kilometer-range communication to any compliant gateway on public or private network infrastructures.

Typical applications include Indoor Air Quality (IAQ) monitoring, HVAC control, greenhouse management, and smart agriculture deployments.

Applications

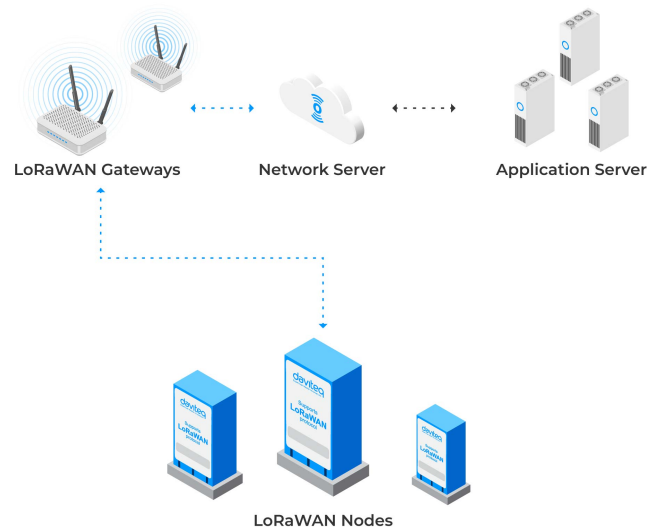
Ambient Air Quality Monitor, Indoor Air Quality Monitor, Gas Analyzing, Warehouse Monitoring

Notes For Applications

The sensor must be fully immersed in the measurement gas. Avoid

- ✓ **LoRaWAN communication**
LoRaWAN communication standard to allow sensor connect to any LoRaWAN Gateway on the market
- ✓ **5-10 years battery**
Ultra-low power sensing technology from Daviteq with Ultra-low power wireless technology allow the sensor can last up to 5 years with 02 x AA batteries
- ✓ **Longer lifetime, lower cost of ownership**
Non-depleting luminescence technology delivers far longer service life than electrochemical alternatives to reduce replacement frequency and long-term maintenance costs.
- ✓ **Reliable readings in real-world environments**
Inherently selective optical technology shows zero cross-sensitivity to other common gases to eliminate wrong measurement in mixed-gas environments.

SYSTEM ARCHITECTURE LoRaWAN



DAVITEQ TECHNOLOGIES INC

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www.iot.daviteq.com

Created date: May-18-2026

Updated date: May-27-2026

Specification

PERFROMANCE SPECIFICATIONS	
Measuring principle	Luminescence quenching by oxygen
Oxygen measuring range	0 – 25%
Response time	T90: < 30 s (typical)
Accuracy	O ₂ ‰: 1.1%, ppO ₂ : < 2% FS, Temperature: indication only, Pressure: ± 5 mbar
Resolution	O ₂ ‰: 0.01%, ppO ₂ : 0.1 mbar, Temperature: 0.1 °C, Pressure: 1 mbar
ENVIRONEMNT SPECIFICATION	
Operating temperature	-30 to +60 °C
Storage temperature	-30 to +60 °C
Humidity	0 – 99% RH (non-condensing)
Barometric pressure range	500 – 1200 mbar
COMMUNICATION	
SF Factor	SF7~SF12
Antenna	Internal Antenna 2.0 dbi
Battery	02 x AA size 1.5VDC, battery not included
RF Frequency and Power	860~930MHz, 14~20 dBm, configurable for zones: EU868, IN865, RU864, KR920, AS923, AU915, US915
Protocol	LoRaWAN, class A
Data sending modes	Interval time and when alarm occurred
RF Module complies to	ETSI EN 300 220, EN 303 204 (Europe) FCC CFR47 Part15 (US), ARIB STD-T108 (Japan)
Vietnam Type Approval	TBA soon
Working temperature	-40~60°C (with AA L91 Energizer®)
Housing/Protection	Aluminum + Polycarbonate/ IP67
Dimension	H180xW73xD42
Net weight	< 400g

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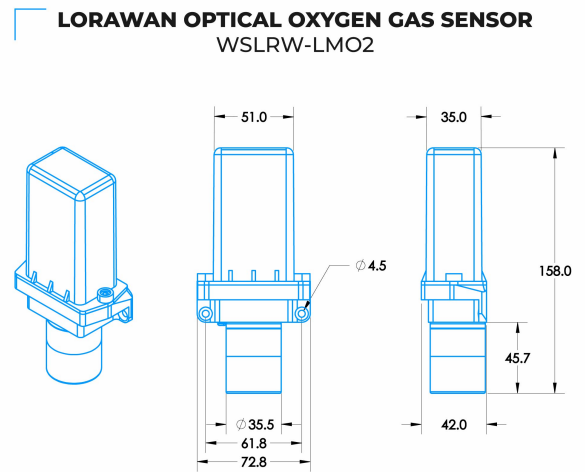
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DIMENSION DRAWING OF
WIRELESS NODE (Unit: mm)

ME:2

RECOMMENDED BATTERIES



E91 AA
Alkaline battery

-18~60°C working temperature
10-year shelf life
3000 mAh capacity
Price: 1X

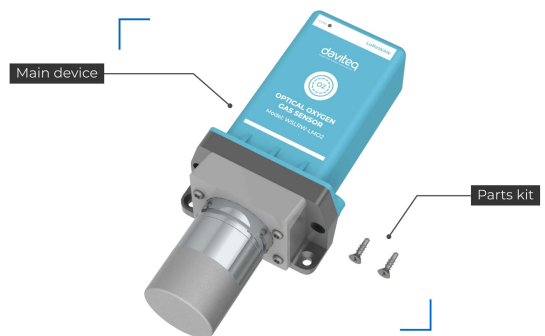


L91 AA
Lithium battery

-40~60°C working temperature
20-year shelf life
3500 mAh capacity
Price: 3.5X

POWERED BY PRIMARY BATTERY

LORAWAN OPTICAL OXYGEN GAS SENSOR
WSLRW-LMO2



PRODUCT PACKAGE

ME:1

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Ordering Information

ITEM CODE	DESCRIPTIONS
WSLRW-LMO2-25-01	LORAWAN OPTICAL OXYGEN GAS SENSOR, 0~25%, Internal antenna, Type AA battery 1.5VDC, IP67, 860-930MHz for all frequency regions

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